UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/787,222	02/27/2004	Toyotaka Yuasa	1021.43559X00	4833

20457 7590 12/23/2009

ANTONELLI, TERRY, STOUT & KRAUS, LLP
1300 NORTH SEVENTEENTH STREET
SUITE 1800
ARLINGTON, VA 22209-3873

EXAMINER	
CREPEAU, JONATHAN	
ART UNIT	PAPER NUMBER
1795	

MAIL DATE	DELIVERY MODE
12/23/2009	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/787,222	YUASA ET AL.	
	Examiner	Art Unit	
	Jonathan Crepeau	1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *02 September 2009*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,6,10,12 and 14-21* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,6,10,12 and 14-21* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *10/23/09*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. This Office action addresses claims 1, 6, 10, 12, 14-18 and newly added claims 19-21. Although the claims have been amended, they remain rejected over the art of record. Accordingly, this action is made final.

Claim Rejections - 35 USC § 103

2. Claims 1, 6, 10, 12, 15, and 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 2001-243951 in view of WO 03/044881.

In the abstract, JP '951 teaches a positive electrode material comprising secondary particles formed from primary particles. The primary particles are connected to each other by sintering. In the abstract, it is disclosed that the material may comprise $LiCoO_2$. As disclosed in [0025] of the machine translation, up to 40 mol% of the cobalt may be replaced with metals such as nickel and manganese. Regarding claims 1 and 15, the recitation of "for an automobile" in the preamble is treated as a statement of intended use and is given little weight (MPEP 2111). Regarding claims 6, 12, and 17, the mean particle size of the primary particles is 0.4-10 microns.

However, JP '951 does not expressly teach that the length in which the plural primary particles are linked on the section of the secondary particle is equivalent to 10-70% of the length of the whole periphery on the section of the plural primary particles, as recited in claim 1, or that the length is 10-70% "through a substantial center of the secondary particle" as recited in claim 10, or that the length is 50-70% through a substantial center, as recited in claim 15.

However, the reference would motivate the artisan to employ primary particles with relatively large portions of their surfaces touching, thereby rendering the claimed range obvious. As noted above, in the abstract, it is taught that the primary particles are sintered together. Further, in paragraph [0013] of the machine translation, the reference teaches that by sintering, it is possible to raise electric conductivity, to reduce the quantity of a required conducting agent and to raise pack density. The artisan would be motivated by these teachings to manufacture the secondary particles such that relatively large portions of the surfaces of the primary particles are touching each other. Accordingly, the limitations in the independent claims that the length in which the primary particles are linked on the section of the secondary particle is equivalent to 10-70% (50-70%) of the length of the whole periphery on the section of the primary particle would be rendered obvious.

JP '951 further does not expressly teach that the positive electrode material comprises LiaMnxNiyCozO2, as recited in claims 1, 10 and 15.

WO 03/044881 teaches an $Li_xMn_aNi_bCo_cO_2$ material in the abstract. Example 3 in Table 1 discloses a composition falling within the subscript ranges recited in claims 1, 10, and 15.

Therefore, the invention as a whole would have been obvious to one of ordinary skill in the art at the time the invention was made because the artisan would be motivated to use the $Li_xMn_aNi_bCo_cO_2$ composition of WO '881 as the active material of JP '951. In the abstract, WO '881 teaches that a positive electrode and a lithium cell using this material have a high energy density and excellent charging/discharging cycle performance. Accordingly, the artisan would be motivated to use the $Li_xMn_aNi_bCo_cO_2$ composition of WO '881 as the active material of JP '951.

JP ‘951 further does not expressly teach that the plural primary particles are of a planar type or are composed of planar crystals as also recited in claims 1, 10 and 15.

However, it is submitted that at least a portion of the primary particles of JP '951 would have a "planar" structure, when made by the method of the reference using the composition of WO ‘881. This would include particles with a generally rectangular cross section, such as tabular or flake-shaped particles. Although JP '951 does not appear to disclose any specific shape of the primary particles (although it explicitly discloses that the secondary particles are spherical or elliptical), such planar primary particles or crystals would be obvious to one skilled in the art for the aforementioned reasons. In addition, to the extent that JP ‘951 may teach generally round primary particles, it has been held that a change in shape is generally not sufficient to distinguish a claim over a prior art reference absent a new or unexpected result (MPEP 2144.04).

3. Claims 14, 16, and 18-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over JP 2001-243951 in view of WO 03/044881 as applied to claims 1, 6, 10, 12, 15, and 17 above, and further in view of JP 2001-085006.

JP ‘951 further does not expressly teach that the voidage of the secondary particle is 2.5-35%, as recited in claims 14, 16, and 18 or that it is 2.5-10%, as recited in claims 19-21.

JP 2001-085006 teaches a positive electrode material comprising a lithium composite oxide in the form of primary particles flocculated into secondary particles (see abstract). The secondary particle has a voidage of 30% or less, preferably 10-20% (see [0029]).

Therefore, the invention as a whole would have been obvious to one of ordinary skill in the art at the time the invention was made because the artisan would be motivated to use the voidage disclosed by JP '006 in the secondary particle of JP '951. In [0029], JP '006 teaches that the range of 10-20% results in better cycle property. Accordingly, the artisan would be motivated to use the voidage disclosed by JP '006 in the secondary particle of JP '951. Furthermore, in [0013] of JP '951, it is taught that "pack density" may be increased by the sintering, which would be the inverse of the claimed voidage. Accordingly, the voidage may be reduced to a relatively low value, i.e., to the values disclosed by JP '006.

Response to Arguments/Declaration

4. Applicant's arguments and declaration under 37 CFR 1.132 filed September 2, 2009 have been fully considered but they are not persuasive.

Applicants initially state that in Matsumoto et al., it appears form the English language machine translation that the primary particles "may be spherical." In response, it is submitted that the "spherical" clause appears to be in reference to the secondary particle, which also may be an "ellipse ball-like aggregated particle." Accordingly, the reference appears to be silent as to the exact shape of the primary particles. However, even if it can be shown that the primary particles are indeed "spherical," the claimed "planar" shape is still not considered to distinguish over the references for the reasons stated above.

Regarding the 37 CFR 1.132 declaration and remarks associated therewith, it is noted that the declaration does appear to show an unexpected result between the discharge capacity of Sample B (9.5 mAh/g, sintered at 975 C) and that of Sample A (4.5 mAh/g, sintered at 900 C).

However, the Examiner maintains the position that such results are not commensurate in scope with the claimed subject matter because there is no sintering step recited in the claims. It is suggested that Applicant amend the claims to recite that the product is made by a step of sintering at a particular temperature. However, Applicant is advised of the following: 1) that entry of such amendment after final rejection is not a matter of right; 2) that there is not believed to be sufficient support under 35 USC 112 first paragraph for a specific temperature of 975 C in the application as originally filed; and 3) that should an amendment be filed to recite a sintering step at 950 C, there is not sufficient evidence of record to show that this temperature produces unexpected results. It should be noted, however, that there does appear to be support for a sintering temperature of 1000 C ([0029] of instant specification).

Accordingly, for these reasons, it is submitted that Applicant's declaration, while it is believed to show unexpected results, still is not sufficient to distinguish the present claims over the prior art.

Conclusion

5. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, THIS ACTION IS MADE FINAL. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period

will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jonathan Crepeau whose telephone number is (571) 272-1299. The examiner can normally be reached Monday-Friday from 9:30 AM - 6:00 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Basia Ridley, can be reached at (571) 272-1453. The phone number for the organization where this application or proceeding is assigned is (571) 272-1700. Documents may be faxed to the central fax server at (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Jonathan Crepeau/
Primary Examiner, Art Unit 1795
December 23, 2009